VOL. XIV FEBRUARY, 1908 No. 5

The Agricultural Student

DEDICATION OF THE NEW BUILDINGS

A Monthly Magazine
DEVOTED TO AGRICULTURAL EDUCATION

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JOHN NEYLON.
MRS. JOHN NEYLON.

Raymond, Nebr., Nov. 9, 1906.

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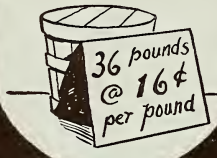

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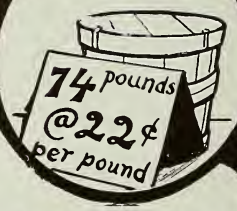
How? Because the U.S. SEPARATOR skims out all the cream

AFTER



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THE AGRICULTURAL STUDENT.

VOL. XIV. OHIO STATE UNIVERSITY, COLUMBUS, FEBRUARY, 1908 No. 5

A Great Day for The Agricultural College!

DEDICATION OF THE NEW AGRICULTURAL BUILDINGS.

The date is set for February 12. Everybody will be there. President Thompson will preside. Professor Thos. F. Hunt will be the chief speaker. Governor Harris will deliver an address. Trustee O. E. Bradfute will also speak, and last but not least, we *must* hear from Professor Plumb and Dean Price. Such, in brief, is the program for dedication day on which those new buildings, every student and professor of our College is so proud of, will be dedicated.

It is eminently fitting that Professor Hunt should come here to take the leading part in this dedication ceremony, for it was during his deanship and under his direction that many of the plans for the betterment of the Agricultural College were started. These plans have been carried out under the direction of Dean Price and the agricultural faculty, and it will certainly be gratifying to Prof. Hunt to see the progress that has been made as evidenced by these new buildings.

Perhaps the happiest man in the crowd will be Professor Plumb, and indeed he has a right to feel proud and happy. Happy in the knowledge that the department of which he is the head now has an equipment second to none in the country, and proud that it is due largely to his efforts that the buildings are so complete in every detail, are so well planned, and that the work has been so quickly completed. Few of the students realize how much time and work Professor Plumb has spent on these buildings, and how much their completion means to him.

Do we students appreciate fully the advance this marks in the building up of our College and the prestige it will give her over our state? Ohio is a great live stock state, and to this industry she owes much of her agricultural prominence. She has within her borders some of the best herds of pure stock in the United States, and she has produced some of the most prominent breeders of live stock and some of the most famous animals. The future of the industry in Ohio is bright and points to still greater development. This means better farming, more fertile farms and greater agricultural prosperity. Our Agricultural College is now fitted to fill her place as a trainer of young men to become stockmen and scientific breeders of live stock, and to encorage and aid the industry as never before. The desire of every loyal student and alumnus of our College is to see it as the recognized leader of agricultural thought and work in the state, and that it be known and its influence felt everywhere. February 12 marks a step in that direction.

FORESTRY CONDITIONS IN GERMANY.

Professor Alfred Dachnowski.

For the welfare of the community, the state, or the nation, the forest is a priceless inheritance, one of the most valuable national resources. It forms in many ways, directly and indirectly, an indispensable basis of material and social prosperity. The increased interest displayed by the general public in matters of forestry and in the forest standpoint is, therefore, worthy of special comment. Indeed, it is with some gratitude that we note how the customary hidrance to the advancement of forestry in the United States is replaced by a more definite idea of conservation and wise management. It is recognized today that the maintenance of our economic and industrial development is largely dependent upon a future supply of timber. The many and various products of our forests, the influence of forests on commerce, and on climate, water supply, navigation, etc., are receiving the deserved attention. An appreciation of the purposes and the significance of our forest service no longer needs to be urged. Lumbermen are checking the reckless use of timber resources; they are now considering forest reservations from the point of view of future profits from timber accretion, rather than as immediate gain. The railroads, to whom belongs the credit of having realized that forestry has a sound economic basis, are practicing this conserving policy. In a steadily increasing number of colleges and universities forestry is an integral part of the curriculum, and treated as one of the important economic and public questions.

The forestry problem, like all other public and social questions, is a problem arising directly out of the needs of the hour. The danger of a complete exhaustion of timber is recognized; the moment for checking wanton destruction and applying remedial measures seems almost missed; large sums of money are paid annually to foreign countries for timber which we should and can produce at home. Our Bureau of Forestry has not needed this lesson. For many years it has been endeavoring to awaken the people to the fact that intelligence applied to forest resources will bring a good return. In matters of forestry, as in other cases, the great benefit of the past and the experience of others consists in the help of wisely meeting the needs of the hour, and of thoughtfully adjusting for the wants of the future. For this reason a brief review of forestry conditions in German, in its development and present day practice, seemed to me very useful for THE AGRICULTURAL STUDENT, if for no other purpose than (1) to show how little we gain from the experience of other countries, and (2) to dispel a possible prejudice against the methods employed in other countries on the ground that our forest conditions are peculiar.

It is not necessary to dwell at length upon the historical development of forestry. The early German knew no private forests; the entire forest area of the country was common property. Preservation and cultivation of forests became a practice during the early centuries of the Middle Ages, when indiscriminate cutting and clearing of forests resulted in scarcity of fuel. Feudal tyranny, and the unsuccessful end of the Peasants' re-

The New Horse Barn.

bellion, together with the long and destructive religious wars of the fourteenth and fifteenth century, reduced these communal forests almost completely. With but few exceptions the forest regions became private property through ceisure and partition.

The earliest forest laws date from the fifteenth century, prohibiting the cutting of timber having less than a certain diameter. Everywhere sheer necessity caused and promoted forest management and forest science. Protection of game and protection against forest fires marked the beginning of a more definite and systematic working plan. The game and forest keepers, with a more than usual knowledge of conditions of forests, became the real foresters. The stress of circumstances differentiated them. It brought with it the necessity of calling upon these men entrusted to protect the game, to protect also the stand of timber, and to plant young trees. The first attemps were failures. In Germany, as elsewhere, knowledge developed empirically and by degrees. Observation, analysis and experiment brought the woodsmen nearer to a knowledge of the methods that worked best. Only gradually, questions of soil and climate, life-history, habits and the needs and reactions of plants came to be considered. The business side was never lost sight of in all this seeking after scientific principles. Questions of cheaper transport, improvement in quantity and quality of wood, providing undiminished sources for future generations—these and more hastened the development of the refined methods of today. Forest academies were established in the year 1783, and

from this time on the scientific knowledge of forest matters was assured. It would be interesting reading to point out the controversies which arose at various periods between the so-called practical (business) men, and those well trained in forestry. These disputes are remarkably similar to those we often hear now in this country. They illustrate that apparently every country has to pass through the same contest between individuals who look to the past and those who look to the future for criteria in judgment and conduct.

In Germary the idea of perpetuation and continuous improvement of forests is now permanently established. Forestry is equal in importance to agriculture. The forests are scrupulously cared for; there is little waste of material. Betterment of the soil, the construction of roads, and maintenance of certain and lasting revenues are paramount in the minds of those charged with the trust of state, city and village forests. Hence the forest is and remains one of the most valuable resources of Germany.

It is needless to call attention to the fact that forestry in Germany has reached a higher plane of development than any where else. A strong German influence is to be found in the development of forestry in most countries, including Russia, Austria, Switzerland, India and even France. The United States Forest Service has in every respect kept abreast of the time. It has taken European methods and successfully applied them with modification to our forest types. And yet, most of the methods practiced in this country by private corporations and in some state are in reality methods which were practiced in Europe many years ago.

The advanced state of forestry in Germany is best illustrated in the following data taken in part from the Census of 1900 :

The total forest area of Germany was 13,995,868 hectar, i. e. about 35,000,000 acres, or 25.9 per cent. of the total land area. The total yield produced annually is equivalent to $90,000,000. In addition there are 1,580,000 acres of poor farming soil, mostly in Prussia, fit for reforestration. The total of 156 national forests in the United States is now 146,655,833 acres, only about 22 per cent. of our total forests area, assuming a forest area of 700,000,000 acres. Approximately $1,500,000 was received chiefly from grazing and timber sales. That the return will be more than a hundredfold in the near future there is not the least doubt. Coniferous forests prevail in Eastern and Middle Germany, especiallq in the province of Brandenburg, Prussia, where it represents 83 per cent. Fully two-thirds of this is planted in pine (Pinus silvestris). Deciduous forests occur in the west and south.

The number of different species found in these forests is relatively small. Of the principal indigenous trees, twenty-nine are deciduous and seven are conifers. Of greatest value and hence predominant are beech (Faqus silvatica), oak (Quercus sessiliflora, Q. pedunculata), pine (Pinus silvestris), spruce (Picea excelsa), and fir (Abies pectinata). The associates of these are Carpinus betulus, Betula albo, B. pubescens, Populus tremula, P. alba, P. nigra, Alnus glutinosa, A. incana, Salix alba, S. fragilis, and Pinus montana. They are found mixed here and there with beech, oak and pine forests.

In the south and west the following forms occur mixed with oak forests, hence never as pure stands: Elm, (Ulmus campestris, U. montana, U. effusa), ash (Fraximus excelsior), maple

(Acer pseudoplatanus, A. platanosides, A. campestre), basswood (Tilia grandiflora, T. parvilflora), chestnut (Castanea vesca), and others, e. g., Larix decidua, Quercus rubra, Robinia pseudacacia, Pinus strobus. Interesting in this connection is the fact that the last three species mentioned were introduced to German soil at the time of the American Revolution by a Hessian officer, Frsihen von Wangenheim, an ardent student of botany.

No better demonstration of the efficiency and profitableness of a forest administration can be cited than the one of the Prussian state. Seven million acres are administered in 762 districts. During the thirty-five years from 1868 to 1903, the gross returns rose from $1.66 to $3.89, and for wood alone from $1.56 to $3.80 per acre, or 143 per cent. The net yield rose 167 per cent. or from 83 cents to $2.05 per acre.

Not unimportant also is the revenue from different secondary sources. The leasing of hunting rights alone enable the forest administration to add a goodly amount to the income accruing from its forest policy, the amount varying from $500,000 to $650,000 per year. About half a million dollars annually is spent for the advancement of forestry in schools and experiment stations. Great stress is laid upon the need of testing all practice in the forests by the laws of plant physiology and ecology.

The second largest administration of Germany is that of the kingdom of Bavaria. The total forest acre is 6,464,000 acres, of which about 2,500,000 acres is state property. Nearly fifty per cent. is in private ownership. The budget of the Bavarian forest department shows that the total income from wood has been about $10,000,000; the expenditures are figured at $4,285,000, leaving a let result of $2.30 per acre.

The forest area of the kingdom of Saxony is 950,000 acres or 25.8 per cent. of the entire land area. Six per cent. of the forested acre is communal, and forty-six per cent. is owned privately; 420,000 acres is state forest, which in 1905 produced a net income of $1,900,000. Space does not permit to cite other examples, all of which show that this valuation is constantly being enhanced. Instead, I wish to mention here the fact that the good condition and large yielding capacity of German forests is chiefly attributable to three things: Good roads, education, and central management with enforced regulations.

A visit to the forest regions of Germany impresses one with the importance of good roads. They penetrate the forest in almost every direction, so that inaccessible parts become profitable solely through the construction of excellent stone roads. It is true, a rise in prices accounts in part for the increase in the net yield cited above, but improvement in transportation, in management, in general forest conditions, exercise the greater influence. Let me cite just one example of the economy resulting from a properly constructed road system. In 1872 the forest academy at Münden built roads in a district comprising over 11,000 acres. In comparing the average prices obtained for workwood alone, when road construction proceeded more or less rapidly, and in 1896-1901, at its completion, it was found that the price difference was 0.67 mark and 2.60 mark, a rise in value of 21 per cent., due to better transportation.

The education of a forester is carried on with the usual German thoroughness as may be seen from the courses of study which the student of forestry is obliged to pursue. Graduation from a gymnasium or real gymnasium is required. None can enter the service until they

have passed an examination and have served one year in the army. The preparatory courses include one year's service in the forests as apprentice, under the special supervision of an Oberförster and two years of study at a forestry school. They close with one to two years' study of social economy and law at a university. At the end of that time the young man passes his first technical and scientific examination. He is now a Forst referendarius and spends two years more in the different divisions of the Bureau of Forestry to complete his practical education in the forest as well as in the office. He now passes another civil service examination and if successful again, he becomes a Forst assessor, with a definite salary. Promotion to Forst meister and Oberförster await him as others die or resign. These are officers of the superior grades of service, charged with the administration of a forest region. The pay is not high, but as government officials they enjoy a social position desirable for European conditions, and in old age draw a pension. For every grade of service a uniform is prescribed, to be worn when on duty and on public occasions. Green is the favorite color and an oak leaf and acorn is a common symbol of the profession.

It has long been recognized that for the best economic results in forest management a common working plan is necessary. The retrogression of much of the private forest holdings has been pointed out repeatedly. Popular education and methods advocated to secure improvement remain too often useless. In Germany today co-operative management of small farmer's woodlands and of village and city forest is encouraged by legislation, and, indeed, has been followed by excellent results. Not only more rational technical management of the wood-lots is thus secured, but also an increase in valuation. Moreover, by co-operation marketing the possibility of securing better prices, lower freight rates, financial assistance, the application of hitherto unusued materials, etc., has been made possible.

In the United States probably no portion of the farm is given as little attention and is so little thought of as the wood lot. Time and again the United States Forest Service has pointed out that wood-crops would continue to be produced with but little less abuse and neglect. It is rather remarkable that in view of the impoverished and waning supply of hardwood and the very great demand for it on the part of many industries, Ohio is doing so little to regain its former standing as the center of hardwood production and hardwood manufacturing. Very few of the states of the Union show anything like the production of excellent qualities of oak, hickory, walnut, ash and catalpa. An organization of small owners should be even more readily accomplished in this country than in the old world, since the advantages of centralized business interests are well known, are more quickly secured, and can be profitably set in operation much more feasibly at this time with the aid of the state forester, or under the efficient administration of the United States Forest Service.

Many a city in the United States could and should follow European examples in municipal improvement by obtaining natural forest reserves without recourse to the usual and expensive landscape work of city parks. While managing the property primarily for revenue, equally important should be the use of such parks for educational and for pleasure purposes. Recreation grounds of that kind have an intrinsic scientific value to schools and colleges

for purposes of nature study; as an arboretum, sanitarium, etc. Hence, in urging the necessity of conserving the country's natural resources, among measures advocated in Ohio to encourage private forestry in Ohio, should be a bureau of working plans for private and city forests and for farm woodlands; supervision and assistance in the management of these by the state forester; special courses at the forestry school for private owners; a forest nursery from which to supply suitable seedlings at near cost price, and provision for suitable portions of the state's forest reserves as health resorts and for educational needs. I am sure such an expression of growing intimacy between the interests of the farmer, the city's industries, and the Forest Service would result in an enhanced value of wood lands, and would further the aim and needs of all parties interested.

Botanical Department, O. S. U., December, 1907.

HORTICULTURE IN MIDDLE WEST.

Orma J. Smith, '07.

Assistant in Horticulture, Iowa Agricultural College.

From the earliest settlements of a new country until it becomes thickly inhabited we find certain evolutionary processes taking place. When our early settlers landed on our eastern shores their first thoughts were directed towards supplying themselves with the actual necessities of life, such as clothing, food and shelter. The primary consideration in the making of clothing was that it should afford protection for the body. The exactness of fit and neatness of appearance were of very minor importance. The food that was used consisted largely of meats such as the forests afforded and a very limited variety of vegetables. The cultivated fruits and many of our present day vegetables were not to be found upon their tables. Their shelter was formed from the hewn logs of the forests and devoid entirely of architectural beauty, nor was any thought whatever given to its embellishment by artificial plantings.

As the country became more densely settled these conditions gradually changed. Instead of the members of the family in each household acting in the the capacities of manufactures, farmers, carpenters, etc., their efforts became more centralized along special lines, and as a result of this we find improvement in all directions. As the wealth gradually increased some attention began to be given to the aesthetic side of life. More beautiful houses were built, attractive lawns bordered by masses of shrubbery were introduced, the list of vegetables for table use became greatly enlarged, and the various kinds of fruits became an almost necessity. Instead of the farmers confining their labors to the production of grain and stock many of them gradually turned their attention to the more intensive farming of raising fruits and vegetables. So that today the demand in the eastern states for these socalled horticultural corps, has become so great that wherever favored localities exist large areas are planted in these crops. In such localities the lands have risen in value to enormous prices.

In the far west on our Pacific shores there has taken place a somewhat similar but more rapid transformation. The first settlers were attracted by prospects of gold discoveries, but despairing of this many turned their attention to the rich fertile lands and began to raise stock and

grain. The country grew rapidly in population and wealth. It was soon learned that the climate was especially adapted to fruit growing. This industry once begun, the land rose rapidly in value so that a large part of it today commands as high a price as almost any farming land in the world.

Thus in both the east and the extreme west where the country is thickly settled, comparatively speaking, and progress has reached high standards, we find the greatest interests in horticultural pursuits. Almost every portion of these two sections that seemed well adapted to the growing of any particular fruit, has been taken and land values have soared beyond the reach of the average home seeker. However, between these two regions there is a vast area, a large part of which is an extensive prairie, only as yet in its early stages of development. The early settlers on their western march found here their ideal grazing lands and soon large ranches of sheep and cattle had crowded out the vast herds of buffalo. As more settlers made their appearance the ranches became smaller and the prairie sods began to be turned under for the production of grain. Today the broad grazing areas and large ranches are but history and in their places we find the most flourishing grain and stock farms that are to be found in any parts of our country.

But while we are thus wont to look upon these states as being great in the production of such products we must not lose sight of the fact that the same evolutionary process toward the development of horticulture is taking place the same as that in the other sections just mentioned. The country becoming more thickly settled and educational facilities improved we find the same growing interest along the line of horticultural pursuits. This is manifesting itself by the more beautiful lawns, the greater interest in tree planting, and the more extensive areas devoted to fruit growing. Favored localities for the production of fruit are continually being sought and in some sections the fruit industry is in as flourishing condition today as in the eastern or extreme western states. Large commercial orchards of twenty-five to one hundred and fifty acres are no longer unusual in such prairie states as Nebraska, Kansas and Iowa. Some idea of the interest taken in the production of apples in the last named state may be obtained from the fact that although this is an off year for the production of fruit yet there were between 1500 and 1600 plates of apples on exhibition at the State Horticultural Society held at Des Moines in December. There were also over 300 plates of Iowa grown apples on exhibition during the two weeks' short course held at Ames Agricultural College. In the southwestern part of Iowa there is being developed an extensive grape growing industry. The soil seems especially adapted to this industry and fruit growers' associations have been formed so that the fruit is disposed of in the most economical and successful manner.

It is also quite interesting to note the development of horticulture in the states a little farther west as in Colorado, Utah and Idaho. In these states where irrigation is making its rapid ingress we find some of the most ideal locations for successful fruit growing. Within the last decade land values have been known to raise from almost nothing to several hundred dollars per acre. And many instances are noted where land is sold for as much as $2,000 per acre. As the methods of irrigation are introduced throughout these states exceptional opportunities are offered to young men who are interested along horticultural lines.

While it may seem that these states are very far from the leading markets, yet this is overcome largely by the introduction of the modern refrigerator cars and by the methods of disposing of their fruits through fruit growers' associations. In this way the most expert salesmen are employed who keep in touch with the best fruit markets of the world. Thus the growers are able to dispose of their fruits with greater profits and with less efforts on their part.

It is also a noticeable fact that the fruit growers of these states insist upon allowing only the best to go on the market. In the state of Idaho they have a law which forbids any kind of fruit to be sold on the market which shows any evidence whatever of the apple scab or the codling moth. Spraying thus becomes an absolute necessity and as a result of this Idaho's fruit is getting a great reputation for quality and perfection. No doubt but that some of our eastern states would profit greatly if they would adopt some of these newer western ideas.

Since horticulture comes last in the development of a country it stands as one of the highest types of agricultural pursuits. In its various phases it associates itself with the most advanced progress along agricultural lines, and as our country continues to develop and increase in wealth we are sure of an even greater increase along the line of horticultural interests. As has already been said the most favored localities of the east have been taken. The same is true of the best lands of the extreme west, while in the intervening space new areas are being opened up annually. It is here that horticulture is going to make its most rapid strides in the near future, and for the young man of limited means who has a love for this kind of work it seems safe to say that the opportunities in horticulture in these middle western states offers as great if not greater inducements as any other line of agricultural work.

March Will Bring Them.

THE DIETETIC VALUE OF FRUIT.

Professor W. R. Lazenby.

Fruits in some form should constitute an essential part of our every day diet for the following reasons:

(1) *Because they taste good and we like them.* I place this reason first because it is the best one that can be given. Every one in a normal condition enjoys fruit and the natural appetite is a true guide to the needs of the body. Hunger and thirst are sensations wisely given, and when not abused, direct us in the path of healthy, that is to say, *happy living,* for good health is not only wealth, but happiness.

If one has a good constitution, is temperate in habits, and leads a clean, wholesome life, his appetite is a guide that may be implicitly trusted. Under such conditions we all like fruit, and should eat it in the serene confidence that the thing you like in the way of food, is the thing you need, and that the thing you need is the thing you *do* need.

In satisfying our natural appetite for fruit, if we use such fruits as are well matured, juicy and fine flavored, we reach the highest form of palate or taste pleasure, with the least possible digestive effort.

(2) *Because they help to keep our bodies in good condition.* Our ordinary fruits contain the following substances or compounds in greater or less proportion: (1) Water, (2) sugar, (3) acids, (4) oils and ethers, (5) proteids, (6) pestose, (7) cellulose or vegetable fiber, (8) ash or mineral salts. These substances are all essential constituents of a perfect or well rounded diet. While the actual nutrient value of fruit is not high, its dietetic value is very great.

The two qualities which most serve to render fruit wholesome are their acid juiciness and flavor. The juice is largely water, but it contains the sugar and acids of the fruit and if these are present in large quantities and in the right proportion, the fruit juice is agreeable and refreshing. Flavor also adds to the quality of fruit. The flavor of fruit is due in part to the acids and sugar they contain, but more largely to the volatile oils and ethers.

Fruit acids and ethers, when taken into the body have a tendency to lower the temperature of the blood and thus correct or allay any slight feverishness that may exist. They also tend to keep the organs of secretion, live the liver and kidneys, normally active. The pectose and cellulose of fruit correct a tendency to constipation and signally aid in keeping the whole digestive tract in a healthy condition. Again the free acids of fruits are highly antiseptic bodies, and tend to prevent disease germs from finding a lodgment and developing in our bodies.

As to what kinds or how much fruit we should eat, there is only this answer: Eat the kinds you like and can best afford, and eat just as much as your conscience and good judgment will allow.

When to eat fruit is a less personal question and the following general rules may be of service:

(1) Fruit should be eaten when you eat other food. Although fruit is easily digested, it is not wise to be constantly and frequently putting into the stomach food of any sort. By this practice the strongest stomach may be ruined by the best of food.

(2) When fruit is eaten before breakfast its cooling and laxative effect is likely to be at its maximum.

(3) Fruit is an excellent thing to be taken with the midday lunch. One slice

of bread with an apple is better than two slices of bread with no apple.

(4) Fruit eaten after dinner adds largely to the pleasure of the palate, while adding little to the tax upon the digestive organs, and which are more likely to be over taxed when there is no fruit in prospect.

(5) If it is ever desirable to partake of a late supper it is well to remember that a peach, an apple, an orange or a cluster of grapes will be far less likely to hurt our later slumbers, than oysters, meat salads, ice cream, rich cake and other sweet meats.

Written in competition for a prize offered on the subject by the Columbus Horticultural Society. Awards first prize, but withdrawn from competition.

DOMESTIC SCIENCE.

By a Domestic Science Girl.

To most people "Domestic Science" and "cooking" seem to be synonomous. These people cannot appreciate the need of such a course. "Why, she can learn to cook at home." is the general remark. And so she can, but isn't it just as necessary for a woman to know the "whys" and "hows" of her profession, as for a man to know the "whys" and "hows" of his profession. Most women will acknowledge that they do nearly everything just as their mothers did before them. Now there are newer and more approved methods, and a woman must be very capable and progressive to be able to keep up with these new methods. Then some of these new methods are valueless and the woman would not be capable of choosing the best and easiest means, had she no training.

There are some girls who do not get any training at home. The mother says: "It is so much less trouble to do it myself than to teach her how." The girl soon begins to feel a sort of pride in saying, "Mamma never taught me to do anything." This girl comes to take a Domestic Science course; she is humiliated before others and experiences a feeling of injustice when she hears the statement, "The mothers are the ones to blame."

Then there is the girl whose mother says, "Indeed as long as I live my daughter shall not work." How can such unfortunate girls enjoy living if they do not know or understand the first principles of home management and personal responsibility?

Now what could be more helpful to such types of girls than a Domestic Science course. And yet on every hand people ask us, "Why is it a practical course." Of course it is, it couldn't be anything but practical. Whether the girl becomes mistress of a home or teaches, she is prepared for her work.

Domestic Science is not quite so fancy as some people seem to imagine. A Domestic Science graduate does not have to have a different utensil for every operation any more than does the successful machinist. She knows these utensils and how to use them, but she also knows how to do without them. The practical woman will cut her coat to suit her cloth. She will show you that she can make bread without a patent mixer and cook an egg without a thermometer.

The duties of a woman are as sacred as any ordained to man and when we see men giving up years to training for their professions, it seems reasonable that women should give some time to training

for their life work. The great industrial and economic questions of the twentieth century center around household management, and if woman will not adapt herself to these problems she stands in the way of progress. These may seem like little things, but trifles are trifles only to triflers. A woman who has chosen cooking and cooks well stands on a much higher plane than one who has chosen painting and paints badly. The effect of a trained mind on any labor is to dignify that labor.

Ruskin says that in our industrial and social standards we think of two distinct classes. The one class we want always to be working and we call them the servants—the other we want always to be thinking and we call them the gentlemen. In the ideal standard we want those who work and serve to do the thinking, and those who think to be able to work. By so doing both will live broader and more useful lives.

THE MORGAN HORSE.

J. O. Williams.

The Morgan family of horses has been the subject of a revival of interest among breeders, farmers and writers during the past five or six years, and in response to this renewed interest, the average student of horses is prone to know why they became so popular, fell into public disfavor, and are again finding favor among breeders in the upbuilding of modern types of American carriage horses.

The Morgan horse has been alluded to many times as the most remarkable animal in the world from the standpoint of prepotency, and indeed very justly, so, for the prepotency of the Morgan blood shows itself as prominently down through many generations of outcrossing as that of any other type of American horses.

This wonderful family of horses found its nativity in Vermont and owes its origin to a little horse named Justin Morgan, foaled in 1789. The ancestry of this horse has been subject to considerable argument because there has been much to obscure some of the essential facts in the establishment of his history, but according to authorities on Morgan history, his ancestory was largely thoroughbred on both sides, which probably accounts for his reproducing qualities. Although of the same origin as the thoroughbred, the type found in the Morgan does not indicate a common ancestry, but an evolution has taken place, and in the Morgan we find a horse of great individuality and remarkable for his varied achievements. This horse found great favor in the American eye for some time and his fame gradually increased until it reached its zenith, between 1850 and 1870. There were several branches of the Morgan family, owing to the diversity of stock upon which the original Morgan was crossed, and each of which differ in a slight degree, but the essential characteristics remain the same. These various branches we shall not discuss, as space will not permit, but on investigation of the various branches, we find that each one has its respective characteristic and those are transmitted with remarkable accuracy and regularity from one generation to the other.

The Morgan, as we have already seen, found its origin in the hills of the Green Mountain state, and that only a little over a century and a quarter ago. Al-

A Good Carriage Type.

though the blood started in Vermont, today we find it in over half of the states of the Union, and in wide areas of Canada. We find the blood especially active in Indiana, Tennesse and Kentucky; in the latter two states especially, where it is difficult to find speed horses that do not trace back in lineage to these great Morgan sires.

Let us now turn our attention for a moment to the American trotter and ascertain whether the Morgan has been useful as a producer of speed to any marked degree and this with uniformity. A quotation from John Gilmer Speed gives us the facts in a nutshell: "If we were to assume that great speed was the one essential of a good driving horse and then look up statistics on the matter, we would find that the majority of the really fast ones from Ethan Allen's time down to the present have had strong infusions of Morgan blood."

As stated before, the Morgan found its greatest popularity in the decades between 1850-1870, and after that time he began to decline in public favor. This decline continued until about five or six years ago, when a revival in the interests of the family took place. We can attribute the general decline in the popularity of this family of horses almost directly to the lack of size. The type in popular demand for coach purposes was the larger and more flashy kind, and for speed purposes he was side-tracked for those horses of pure breeding that traced to Hambletonian and then to Messenger, as Messenger was an imported horse. The American people at this time acquired a craze for speed and when not found in a large enough extent in the Morgan, as they were primarily roadsters, they were dropped and the Hambletonian taken up.

While it is true that the Morgan suffered a great decline until a few years ago, the blood was not lost but merely spent to a great degree. The good qualities of the Morgan have begun to be thoroughly appreciated by those interested in having and retaining the best quali-

ties there is to be found in a horse. The value of the Morgan for producing desired harness types has been recognized by the United States government, as is evidenced by the horse breeding plants; first, that of Colorado, where the predominating blood of the mares is that of Morgan and the head of the stud, Carmon, shows quite a little Morgan blood himself. More recently a second plant was started at Burlington, Vermont, where nothing but Morgan blood is to be used, the object in this case being to secure high class mounts for the United States Cavalry.

The future of the Morgan, it seems, is a matter for the breeders to determine, and if one reads the signs of the times in the horse world, he would have to admit that there is a marked trend of popular sentiment for the horse with other qualities than speed to commend him. It seems that while there will be no decline in the interests of the great American trotter and pacer, the people are beginning to appreciate that they must have a definite harness type with beauty of form, quality and finish, and one that can step high as well as fast. Heretofore there has been very little systematic effort to produce horses to meet this demand. This supply has come principally from chance variations in type. In many cases, however, where horses of this desired type have been secured, subsequent investigations by their owners have shown that they were of Morgan breeding, and in fact, a study of Morgan characteristics has shown that this horse possesses many of those qualities desired in this modern type of harness horse, for which there is a strong demand.

Those characteristics demanded in this modern type of carriage horse and possessed by the Morgan in a marked degree are: A close, full made and smooth turned form, a lofty carriage of the head and tail, hard colors, and a bold, active, trappy way of going. Add to these excellent qualities already possessed more size, more length of neck in many cases, and a little more step and the specified requirements of an American carriage horse are realized.

This matter of breeding horses of a carriage type seems to be one of serious moment to the breeder and farmer as here, no doubt, lies the most profitable industry in horse breeding today, and if he takes the matter into serious consideration, and breeds consistently, with the proper ideal in mind, this desired type could ultimately be established.

A Team of Coachers.

THE AGRICULTURAL STUDENT

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FEBRUARY

The editor wishes to speak especially of Professor Dachnowski's article on forestry, and urge every Student reader to read it carefully. There is no more important question confronting the people of the United States at the present time than the preservation of our forests and the planting of forest trees. To realize the demands modern civilization makes upon the wood supply of the country, we need only recall a few of the more important industries requiring a large supply. The production of paper, railroad ties, vehicle manufacture, matches, building purposes, furniture, tanbark, ship building and a thousand other industries make enormous inroads on our fast decreasing supply. Unless the people wake up promptly to the situation a timber panic will stare us in the face. The Government Department of Forestry is making great efforts to arouse the people to the gravity of the situation and we believe with some success. This is a good start for it seems that the government must make the first great move and that private owners will follow. Germany long ago has been successful in solving the problem. We have thus the experience of another nation to profit by.

To show that an awakening is coming to the people, the following resolution passed by the National Grange, and at a conference of the Forestry Boards of Minnesota, Wisconsin, Illinois and Ohio, held at Saginaw, Mich., recently, is an indication:

Whereas, We appreciate the great importance of forest wealth for best national development, and the great need of education in forestry; and

Whereas, The landgrant colleges and experiment stations have been a great uplifting force in the development of American agriculture and have fully justified the expenditure of national funds for their support; and

Whereas, These institutions are admirably adapted to teaching forestry and will do so if provided with means; and

Whereas, The income from the National Forest Reserves has reached the sum of $1,500,000 per year, which is now paid into the national treasury and is used for general expenses of government; and

Whereas, There is a certain fitness that appeals to us in using a portion of the income from the National Forest Reserves for teaching forestry and thus aiding and perpetuating our forest wealth; now, therefore be it

Resolved, That we recommend that a liberal portion of the income from the National Forest Reserves be apprpriated by congress to the several states and terrttories for instruction and experimentation in forestry in the agricultural colleges and experiment stations.

The Student Union.

The second annual banquet given by the Student Union and students of the Agricultural College was held at the Beggs dining hall January 15. It was largely attended and was a success in every way. A large number of alumni and ex-students were present and some time was given to allow for greetings between old friends and schoolmates. After the banquet was served, toasts were given, E. J. Riggs, '96, acting as toastmaster. Toasts were given by J. F. Cunningham, '97, A. G. McCall, '00, Commissioner Dunlap, W. I. Chamberlin and one of this year's short course men, Mr. R. D. Clarke.

After the toasts were given the business of the Union was taken up, a new constitution adopted, and officers elected.

A little history of the Student Union will be given here for the benefit of the younger students who are not acquainted with the past work of this organization. Several years ago the Students' Union was organized for the purpose of encouraging agricultural study and experimentation in Ohio. The work was under the direction of Agricultural College men and was open to all students of agricultural work and nature study. Great interest was taken in the work and many valuable experiments were carried on and reported by the members. Finally, the volume of work became so great that the officers of the Union could not take care of it and it was turned over to the Agricultural College and to the Experiment Station. The extension department of our Agricultural College represents the outgrowth of one phase of the work. After this there seemed little left for the Union to do and since then, until last year, it has been almost extinct. Last year a few loyal alumni held a banquet at the Busy Bee and formulated plans to keep the Union alive. They agreed that if it served no other purpose than to bring alumni and ex-students together once a year to renew friendship and foster loyalty it would serve a sufficient purpose. Committees were appointed to draft a new constitution and report the following year. This was done and the constitution as published in the January STUDENT was adopted with but a few minor changes. A few of the more important features of this constitution are:

Any person who has at any time been enrolled in the College of Agriculture of Ohio State University, who has been or is an instructor at the College, or an employe of the Experiment Station, is eligible to membership.

There shall be an annual meeting to be held in Columbus during the week of the state agricultural meeting.

The dues shall be 50 cents annually, and all members shall receive THE AGRICULTURAL STUDENT, which shall be the official organ of the Union.

The Student Union should be a strong factor in promoting college loyalty over Ohio and we hope it may enroll every ex-student and alumni of our College.

The officers for this year are as follows: President, J. P. Cunningham; Vice President, C. C. Hatfield; Secretary-Treasurer, M. O. Bugby; Committee on College Affairs, Prof. Vivian, three years, L. H. Goddard, two years, E. J. Riggs, one year; Committee on Necrology, Prof. H. C. Price, A. G. McCall, R. W. Dunlap; Newspaper Representative, A. G. McCall.

The Ohio Corn Improvement Association.

Among the many interesting meetings held during convention week at Columbus none was of more importance to the cause of improvement in agriculture than the meeting at which the Ohio Corn Improvement Association was organized. This meeting was held in Townshend Hall, Ohio State University, January 15. A previous call had gone out from interested men and the roll call of counties showed fifty counties represented and 157 delegates. This was a remarkable fact and shows the importance Ohio farmers attach to the corn crop and their desire to study the improvement of the crop.

The purpose of the Association is to study and encourage improvement in methods of selection, culture, handling, etc., of the corn crop and to bring the state up to the production of a more uniform type. The unit of organization is

the county and each county is to have its organization and officers. Many counties are already organized, and it is expected that each county will give corn shows, offer prizes and do all it can for improvement of the crop. Each county shall send delegates to a state convention held every year, and there will possibly be a state show at the end of each season.

A membership fee of 25 cents is required of each member and this entitles him to full membership for a year. A book of receipts can be secured and any one can call a county meeting and organize his county. So if your county is not organized, don't wait for some one else to organize, but help to organize.

The following officers were elected:

President—Chas. E. Groce, Circleville, Ohio.

Vice President—Horatio Murphy, Mt. Gilead, Ohio.

Secretary—O. H. Goddard, Wooster, Ohio.

Treasurer—O. E. Bradfute, Cedarville, Ohio.

Ohio has been needing such an Association as this and it is capable of greatly improving the quality and quantity of the Ohio corn crop.

WITH THE SHORT COURSE MEN.

Large Enrollment in the Winter Course in Agriculture.

The ten-weeks' course in agriculture at the Ohio State University opened with an enrollment of fifty more than last year—an increase of nearly forty per cent. About seventy counties are represented in the enrollment and a number of students come from adjoining states. The average age of the class is twenty-five years; several students have enrolled who are past fifty years of age. In addition to the regular teaching force of the College, Dr. H. P. Miller, of Westerville, Ohio, instructs in live stock and Mr. Homer Jackson, of Cambridge, Ohio, instructs in poultry.

The Literary Society for the short course men is an interesting and well attended one. There are eighty active members and meetings are held weekly. In general the meetings are given over to the discussion of agricultural topcis, interspersed with recitations, music, etc.

Mr. R. D. Clarke, of Plymouth, Ohio, is president.

The work in the ten-weeks' course is moving along smoothly and the classes are progressing rapidly. More work is being accomplished than last year in the same time, as the work last year was so new that everything did not go off as smoothly as it does this year. The short course men are an enthusiastic crowd and the interest they take in their work makes teaching a pleasure.

Several of last year's short course men attended the Students' Union banquet at the Beggs dining room. Among those present were: R. D. Clarke, H. E. Tweed, Boyd Coffman, J. E. Geissman, T. E. Bowsher and C. W. Frick.

The Farmers' Agricultural Train Over the C. H. & D.

A special train was run over the C. H. and D. railroad by Judson Harmon, receiver of the road, with the co-operation of the Ohio State University and the Ohio Agricultural Experiment Station.

The University and Station were represented by Professor H. C. Price, Prof. O. G. McCall, Prof. U. M. Shoesmith, Prof. C. G. Williams, Mr. F. A. Welton.

Stops varying from fifteen minutes to forty-five minutes were made at the different towns along the line. Some of the larger towns reached were as follows: Bowling Green, Columbus Grove, Wapakoneta, Sidney, Troy, Delphos, Ottawa and many others on the line.

These "institutes on wheels" are very popular and large audiences are always present to listen to the speakers.

At One of the Stops Made by The Agricultural Special Train.

The Dairy School has been in operation now for several weeks, and the class is getting some good working out under the direction of Prof. Erf and Prof. Guthrie. Two new pieces of apparatus, a Duplex pasteurizer and a Wizard agitator, have been added to the laboratory equipment. The boys are getting lots of practical work in butter making as the department is making about 450 pounds of butter per week.

Alumni and Ex-Student News.

'05—C. A. Miner, of California, was one of the alumni attending the banquet. Mr. Miner is interested in nursery work in California.

'05—E. L. Zehring was in attendance at the banquet. Mr. Zehring is breeding Holstein cattle on his farm at Germantown, Ohio.

'06—B. L. West was married during the holidays to a Marengo girl. Mr. and Mrs. West are now at home in Columbus, where Mr. West has a position as advertising manager of a large hardware firm.

'05—J. C. White, assistant editor of the Farm and Fireside, of Springfield, Ohio, was at the banquet.

'05—L. M. Smith, who has been at the South Carolina Agricultural College, goes to the University of West Virginia to teach botany and entomology.

'96—Moses Craig, recently of the Michigan Agricultural College, has accepted a position in the Missouri Botanical Gardens, at St. Louis.

'06—E. L. Bowser is buying agent for the Helvetia Milk Condensing Company at Wellsborough, Pa.

Ex-'06—Ray Smith, of New Carlisle, was another man whose face appeared around the festal board. He is farming near New Carlisle, Ohio.

Ex-'06—Guy Inskeep, of West Liberty, was present to enjoy the banquet. He is married and lives at West Liberty, O.

Ex-'08—Howard Gerlaugh was one of the banquet guests and could be seen swapping tales with Davy Fyffe most of the evening.

'05—E. E. Finney was also present at the banquet. He is married and manages a large stock farm at Marengo, Ohio.

'98—C. K. McClelland, formerly in the Bureau of Plant Industry, U. S. Department of Agriculture, is now director of the State Experiment Farm of five thousand acres at Hay City, Kan.

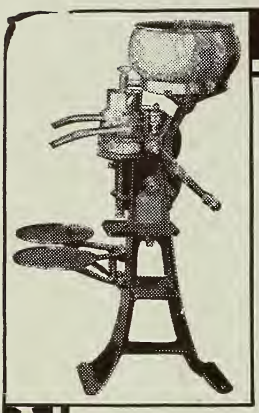
'06—"Ike" Cook, of the class of 1906, and former captain of the 'Varsity track team, is assistant in crop production for the winter term.

BOOK REVIEWS.

FIRST PRINCIPLES OF SOIL FERTILITY—By Alfred Vivian, Professor of Agricultural Chemistry in the College of Agriculture of the Ohio State University. Published by The Orange Judd Company, New York.

This valuable addition to agricultural literature by Professor Vivian is a most excellent treatise on soil fertility. It is intended primarily for home readers and is written in a way that can be understood by any one. In this very simplicity of language is to be found much of its excellence and yet the subject matter is treated in just as complete and thorough a manner as in books using the more technical terms. The more important phases of soil fertility are fully covered and every statement is right up to date and in accord with the best scientific thought and practice of the day. It is written largely from lecture notes used by Professor Vivian in a course in soil fertility given to winter course students and is admirably adapted as a text-book for short courses.

The book is attractively bound and well illustrated and last but not least the price is just one dollar. The value of this book to the home student, to the short course men, and in fact to more advanced students who want an up-to-date work ofthis kind, together with the popular price, insures a large demand for the book. Already several agricultural colleges have signified their intention of using it as a text in their short courses. Students wishing copies may obtain them from Professor Vivian, at Towshend Hall.



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